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LETTER TO THE EDITOR / EDİTÖRE MEKTUP

A case of premature infant who developed tissue necrosis after propofol infusion

Propofol infüzyonu sonrası doku nekrozu gelişen bir prematüre bebek olgusu

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To the Editor,

Propofol is one of the most widely used drugs as an anesthetic agent due to its ideal chemical properties, neutral pH level and isotonicity. Tissue damage due to propofol is extremely rare[1]. There are publications in the literature reporting that areas of necrosis develop secondary to infections[2,3]. Propofol-related necrosis, seizures and thrombosis are rarely seen in newborns and infancy[4]. Here, we present a case of a premature baby with inferior vena cava thrombus, seizures and areas of necrosis in the right leg due to propofol administered during anesthesia in inguinal hernia surgery. To the best of our knowledge, the infant was the youngest patient in the literature to suffer thrombosis after administration of propofol.

An operation was planned for a premature baby who was hospitalized for 118 days due to chronic lung disease and hydrops fetalis. The patient's vital signs were stable. Physical examination was normal. External malleolar vascular access was inserted before the inguinal hernia operation to the baby.

Propofol was given as an anesthetic agent. During the administration of intravenous propofol, the redness occurred along the vascular access in the right leg. The infusion of the drug was stopped and the existing drug was administered by another vascular access. After 45 minutes, the operation was successfully completed. The patient with stable vital signs was taken to the neonatal intensive care unit. The patient was extubated 2 hours after the operation without any decrease in saturation. Sudden cardiac arrest developed at the 15th hour of the infant follow-up. Cardiopulmonary resuscitation (CPR) was applied to the patient and sudden large ecchymotic and partially necrotic areas developed on the right leg (Figure 1).

The patient responded to CPR and was investigated by complete blood count, procalcitonin, and blood culture. Vancomycin and Amikacin treatment was started empirically. Phenobarbital (iv) was administered to the patient who had clonic seizure after CPR. Seizure activity decreased and did not recur during follow-up. Electroencephalography result did not show seizure activity.

The echocardiographic result of the patient detected a hyperechogenic area, which was accepted as a 15 mm long thrombus starting from the right atrium and extending to the inferior vena cava. No findings were found in the lower extremity doppler and cranial ultrasonography of the patient. The Pediatric Hematology Department did not recommend thrombolytic therapy. The patient's procalcitonin level was within the normal range.

There was no growth in the blood culture. Skin care was performed for the lesions on the patient's leg. As a result of the echocardiography examination performed one week later, it was observed that the thrombotic appearance disappeared. The patient's lesions healed without sequelae (Figure 2).

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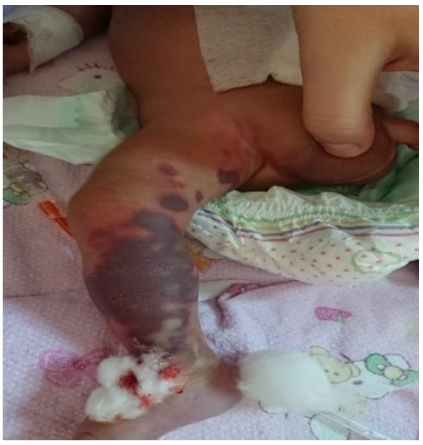

Figure 1. Large echymotic and partly necrotic areas after propofol infusion.

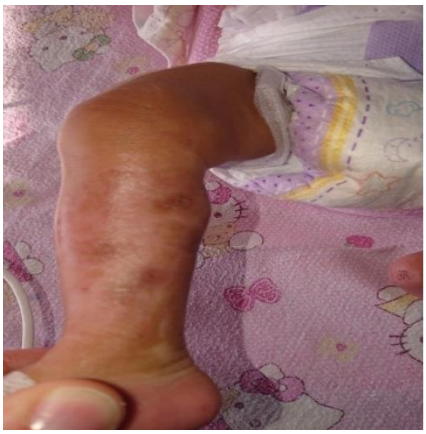

Figure 2. Healed lesions following the local skin care.

Prescribing information for propofol indicates the potential for thrombus development as a side effect [5]. Immediately after this situation, thrombosis was observed in the echocardiography scan of our case. It was not possible to explain thrombosis with any other risk factor. Thrombosis of our case regressed within two weeks.

In patients with suspected propofol extravasation, it is recommended to interrupt the infusion, change the intravenous line, wash with Ringer's lactate, and seek plastic surgery consultation if necessary. The development of necrotic areas may take up to 48 hours.

There are studies in the literature reporting that areas of necrosis develop secondary to infection [2,3]. The absence of growth in the blood culture of our case excludes this possibility. It has been reported that the addition of lidocaine to propofol administration helps to prevent possible infections[3,6].

There are several publications reporting abnormal neuromuscular phenomena associated with propofol[7]. Opistotonus, oculogic crisis, dystonia, myoclonus, choreoathetosis, seizures and seizure-like cases have also been reported[8]. A seizure-like event is used to describe propofol-associated generalized myoclonus and is observed at similar rates in patients with and without a history of epilepsy. The benefit of benzodiazepines in the treatment of this case is controversial[9].

As a result; particular attention should be paid to the serious complications such as necrosis, thrombosis and seizure-like activity observed in this case, which is thought to be related to the propofol given during anesthesia agent

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